National Institute of Environmental Health Sciences

Arctic parasitology: Why should we care?

Author(s): Davidson R, Simard M, Kutz SJ, Kapel CMO, Hamnes IS, Robertson LJ
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Abstract:

The significant impact on human and animal health from parasitic infections in tropical regions is well known, but parasites of medical and veterinary importance are also found in the Arctic. Subsistence hunting and inadequate food inspection can expose people of the Arctic to foodborne parasites. Parasitic infections can influence the health of wildlife populations and thereby food security. The low ecological diversity that characterizes the Arctic imparts vulnerability. In addition, parasitic invasions and altered transmission of endemic parasites are evident and anticipated to continue under current climate changes, manifesting as pathogen range expansion, host switching, and/or disease emergence or reduction. However, Arctic ecosystems can provide useful models for understanding climate-induced shifts in host-parasite ecology in other regions.

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Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Food/Water Quality, Food/Water Quality, Food/Water Security, Food/Water Security, Glacier/Snow Melt, Precipitation, Temperature

Food/Water Quality: Pathogen, Pathogen, Other Water Quality Issue

Water Quality (other): pH; Salinity; Turbidity

Food/Water Security: Food Access/Distribution, Livestock Productivity

Temperature: Fluctuations

Geographic Feature:

resource focuses on specific type of geography

Arctic

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Foodborne/Waterborne Disease, General Infectious Disease, Zoonotic Disease

Foodborne/Waterborne Disease: Cryptosporidiosis, General Foodborne/Waterborne Disease, Giardiasis

Foodborne/Waterborne Disease (other): Toxoplasma gondii; Pseudoterranova decipiens; Trichinella; Echinococcus multilocularis; Echinococcus granulosus

Zoonotic Disease: General Zoonotic Disease, Other Zoonotic Disease

Zoonotic Disease (other): Diphyllobothrium latum; Anisakis simplex

Population of Concern: A focus of content

Population of Concern: ☒

populations at particular risk or vulnerability to climate change impacts

Racial/Ethnic Subgroup

Other Racial/Ethnic Subgroup: Indigenous populations

Resource Type: ☒

format or standard characteristic of resource

Review

Resilience: ☒

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale: ☒

time period studied

Time Scale Unspecified